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(54) METAL MOLD

(57) Abstract:

PURPOSE: To improve productivity and to make sure of safety by decreasing wasteful soft times for a metal mold, consisting of a liq. storage chamber and a gas condensing part, in which vaporized coolant is condensed in the chamber and then flowed it back to the chamber.

CONSTITUTION: The coolant 3 having high b.p., such as liquidized metal at room temp. as mercury, etc., is stored in the liq. storage chamber 2 in the metal mold 1. At pouring molten material 4 in a cavity of the mold 1, the coolant 3 is heated to a settled temp. for the mold 1 by heat input from the material. Under mass production, the coolant 3 prevents a temp. drop of the mold 1 and in case of heating over the settled temp. of the mold 1 by heat input from the material 4, it cools the mold 1 by its boiling and vaporizing. Then, the vaporized coolant 3 is condensed in the gas condensing

part and is flowed back again to the chamber 2. Even if the settled temp. of the mold 1 is high, as a coolant pressure in the chamber 2 is the same or lower than atmospheric pressure state and consequently no leakage of the coolant, this mold is operated under safety.

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